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Fire Brigade, at thirty of whose stations daily temperature observations were made at fixed hours. The majority of the fogs are found to be due to radiation during calm, clear nights. Others are due to the passage of warm air over a cooled surface, and a third group is identified as 'cloud' fog. Some fogs could not be included in any of these categories. These fogs were accumulations of combustion products in an almost calm atmosphere, and were termed 'smoke' fogs. A fog scale, based on the extent to which traffic is impeded by land, river and sea, has been established as a result of this inquiry. As a first step in the direction of greater precision in fog forecasts, a night service at the Meteorological Office is recommended. Forecasts issued at 5 A.M. would have a much greater chance of being verified than is the case with those now issued at 6 P.M., for fogs are chiefly caused by nocturnal radiation. Radiation depends largely on the state of the sky, and an observation of the state of the sky in the early morning would make it possible to give several hours' warning. The present forecasts rarely, if ever, contain any indication of the intensity of the fog to be expected. A detailed study of the distribution of temperature within the London area during fogs shows that the thickest fog is usually to be found in the coldest region.

MOSSES, TREES AND POINTS OF THE COMPASS.

A RECENT number of *Ciel et Terre* (December 16, 1904) contains a note on the orientation of moss growths on trees. It has been stated that mosses grow so much more frequently on the north sides of trees that a traveler who has lost his way in a forest can by this means determine the points of the compass. Lately, further investigation of this matter shows that the mosses grow by preference on the sides of the trees which, for one reason or another, are least likely to lose their moisture. On horizontal branches, the mosses usually grow on the upper side, because the water remains there most readily. The bases of the trunks are more moss-covered because they receive a larger quantity of water. The unequal distribution of light also plays a part.

MONTHLY WEATHER REVIEW.

THE October, 1904, *Monthly Weather Review* (dated December 22) contains the following original articles and notes: 'Studies of Raindrops and Raindrop Phenomena,' by W. A. Bentley, illustrated by photographic reproductions; 'The Advancement of Meteorology,' by T. H. Davis; 'Thunderstorms at Tampa, Fla.,' by J. Bily, Jr.; 'Mount Tsukuba Meteorological Observatory,' by S. T. Tamura; 'September Floods in the Southwest'; 'Royal Meteorological Society'; 'Long-Range Forecasts,' by H. B. Wren; 'Seasonal Rainfall Régimes in the United States,' by V. Raulin; 'Tropical Storm of October 10-20, 1900'; 'The Dechevrens Anemometer: Cold Waves.'

NOTES.

THE *Bulletin* of the Philippine Weather Bureau for July, 1904, just received, gives details of a remarkable rainfall which occurred on the eleventh to the fifteenth of that month. Between 8 A.M. of the twelfth and 11 A.M. of the thirteenth the total fall at the Manila Observatory was 17.19 inches, a quantity much greater than the normal rainfall for July (14.89 inches), which is also the normal monthly maximum for the year. Three half-tone views show the character of the inundations in the city of Manila.

R. DEC. WARD.

SCIENTIFIC NOTES AND NEWS.

AT the meeting of the Society of American Bacteriologists, held in Philadelphia on December 28, 1904, the following officers were elected: *President*, Professor E. O. Jordan; *Vice-President*, Professor S. C. Prescott; *Secretary and Treasurer*, Professor E. P. Gorham; *Council*, Professor F. G. Novy, Dr. Erwin F. Smith, Professor F. D. Chester, Dr. J. J. Kinyoun; *Delegate to the Council of the American Association for the Advancement of Science*, Professor W. H. Welch.

OFFICERS for the Society for the Promotion of Agricultural Science have been elected as follows: *President*, Dr. H. P. Armsby, State College, Pa.; *Secretary and Treasurer*, Professor F. Wm. Rane, New Hampshire College, Durham, N. H.; *Executive Committee*, Dr. J.

C. Arthur, Purdue University, Lafayette, Ind.; Dr. W. J. Beal, Agricultural College, Mich.; Professor F. M. Webster, University of Illinois, Urbana, Ill.

THE following eminent foreign physiologists have been elected honorary members of the American Physiological Society: Th. W. Engelmann, professor of physiology in the University of Berlin; A. Dastre, professor of physiology at the Sorbonne, Paris; J. N. Langley, professor of physiology, Cambridge University; C. S. Sherrington, professor of physiology, University of Liverpool; Fr. Hofmeister, professor of physiological chemistry at the University of Strasburg; J. P. Pawlow, director of the Physiological Laboratory at the Imperial Institute for Experimental Medicine, St. Petersburg.

M. L. TROOST, honorary professor of chemistry at the University of Paris, is this year president of the Academy of Sciences in succession to M. E. L. Mascart, professor of physics at the Collège de France.

At the recent annual meeting of the Torrey Botanical Club Judge Addison Brown resigned the presidency after fifteen years of service. Dr. H. H. Rusby, of the College of Pharmacy, was elected as his successor.

A CABLEGRAM to the New York *Sun* states that Ambassador Choate on February 10 attended the annual meeting of the Royal Astronomical Society to receive the society's gold medal on behalf of Lewis Boss, director of the Dudley Observatory at Albany, N. Y. Professor Herbert Turner, who presided, paid a tribute to Professor Boss. He added that at present a feature of the world's astronomical research was the steady work done in the United States. It was a pleasure to the society for the third time in five years to recognize this work. Mr. Choate suitably acknowledged the gift on behalf of the recipient.

IT is said that Professor Francis G. Peabody, Plummer professor of Christian morals, has been selected by the University of Berlin to be Harvard's first lecturer under the arrangement recently entered into between Harvard and Berlin to exchange professors.

MR. ROBERT T. HILL, accompanied by Dr. E. O. Hovey, of the American Museum of Natural History, and a corps of assistants, has left upon an expedition for the purpose of studying the geography and geology of the Western Sierra Madre of Mexico. The party expects to do valuable reconnaissance work in this interesting field in continuance of the investigations upon the mountains and deserts of the Southern Cordilleras, which Mr. Hill carried on for many years while associated with the Geological Survey, and of Professor Hovey's studies of volcanic phenomena. The expedition is fully equipped for topographic, photographic and geologic work. It is financed by an anonymous New York capitalist.

MR. WALTER H. GILBERT, chief clerk in the president's office of Columbia University, has been appointed assistant secretary of the Carnegie Institution.

DR. W. M. WHEELER, curator of invertebrate zoology at the American Museum of Natural History, will give, at Columbia University, during March, a series of lectures on the social insects—wasps, bees and ants.

SIR WILLIAM THISELTON-DYER, director of the Royal Botanic Gardens, at Kew, took the chair at the opening lecture of the year, delivered, at the West India Committee-rooms, London, on January 25, by Mr. W. G. Freeman, superintendent of the Colonial Economic Collections at the Imperial Institute, on 'The West Indian Fruit Industry.'

WE learn from *The British Medical Journal* that the Danish government has issued a stamp bearing the head of the late Professor Finsen with the object of placing within reach of the poorer classes a means of subscribing to the national monument by which it is proposed to commemorate the work of the Danish investigator. On the occasion of the Christmas and New Year holidays the Danish postmaster-general also issued four million illustrated postcards. The profits on the sale of these postcards are to form the basis of a fund for the erection of a sanatorium for indigent consumptives.

DR. LUDWIG VON TETMAJER, professor of technical mechanics in the Technical Institute of Vienna, died on January 31.

DR. ALPHEUS S. PACKARD, professor of zoology and geology at Brown University, died on February 14, at the age of sixty-six years.

FIVE hundred dollars will be awarded by the College of Physicians of Philadelphia to the author of the best essay submitted in competition on or before March 1, 1906, on 'The Clinical and Pathological Diagnosis of Sarcoma.' Further information may be obtained by addressing Dr. Francis R. Packard, College of Physicians, Philadelphia.

THE Colorado Experiment Station has recently purchased additional land, to extend its farm facilities and to use for the horse-breeding experiments to be carried on with the cooperation of the U. S. Department of Agriculture. The short course in agriculture at the college has proved successful, over one hundred students being in attendance. It lasted for two weeks.

THE case brought by Kansas against Colorado is now being heard before the U. S. Supreme Court through a commissioner. The case involves the situation where the customs applicable to one set of conditions have been found to be inapplicable to those of another, for the riparian doctrine of England and the East is in conflict with the necessity to divert water for irrigation.

THE state of Vermont, following the state of Connecticut, has passed an act making it obligatory to examine each year the eyes and ears of public school children.

The British Medical Journal gives further details in regard to the celebration of the hundredth birthday of Senor Manuel Garcia, which occurs on March 17. The anniversary is to be made the occasion of a great demonstration in his honor by laryngologists of every nationality, who will at the same time celebrate the jubilee of their specialty. The program, as far as at present arranged, is as follows: At midday a ceremonial meeting will be held at the rooms of the Royal Medico-Chirurgical Society, Hanover Square. The Spanish am-

bassador will attend to congratulate the illustrious centenarian in the name of the government of his native country, and addresses will be presented by the Royal Society, before which Senor Garcia read his paper entitled 'Physiological Observations on the Human Voice' just fifty years ago; by delegates of the Berlin, South German, French, Dutch and Belgian Laryngological Societies; by musical societies and by old pupils of the famous *maestro*. In order not to overtax the strength of Senor Garcia, the addresses will for the most part be only formally presented, and the whole duration of the proceedings will not exceed one hour. The meeting will conclude with the presentation to Senor Garcia of his portrait painted by Mr. John Sargent, R.A., at the request of admirers throughout the world, together with an album containing the names of the subscribers. In the afternoon a scientific meeting will be held in the same place for the purpose of giving foreign specialists an opportunity of seeing the methods of work and results of their British brethren. In the evening there will be a dinner, probably at the Hotel Cecil, at which ladies will be present, and it is expected that Senor Garcia will make a speech. Notwithstanding his great age, he is still fairly vigorous in body, and he was able to attend the annual dinner of the Laryngological Society on January 13. His mental powers are absolutely undimmed by age.

IN Massachusetts numerous spring waters have been developed in the vicinity of large cities. The population of the state is largely concentrated in towns, and in all the larger municipalities water systems are maintained. Lake, stream and spring supplies are all utilized, although where the first two are used great precautions are necessary to prevent pollution. In the rural districts of the western or more hilly half of the state springs constitute in many instances the commonest source of water supply, but their use is by no means confined to that region. In fact, because of the absence of other satisfactory supplies, they are often of far greater economic importance in the eastern part of the state, where many of the waters are used in bever-

ages, or bottled or sold in bulk as table waters. It is because of the economic value of the individual springs that the eastern counties are so well represented in the spring records kept by the United States Geological Survey and published in Water Supply and Irrigation Paper No. 102, entitled 'Contributions to the Hydrology of Eastern United States, 1903.' Analyses are given of spring waters at South Wellfleet, Danvers, Arlington, Chelmsford, Coldspring, Framingham, Quincy, Sharon, Hanson, Hingham, Marshfield, Norwell, Scituate, Whitman and Hubbardston. Many interesting details are also added regarding the characteristics of these various waters. Owing to the cooperation of Mr. F. A. Champlin, a driller, the records of Massachusetts wells are also unusually complete. It is hoped that other drillers in this state and other states may care to keep a record of the wells they drill, and be willing to supply the survey with data showing the date on which each well was drilled, the situation of the well, how the water was obtained, the depth of the open portion of the well, the depth of the drilled portion, the total depth of the well, the depth to water, the depth to rock, the supply per minute, the use to which the water is put, and the cost of the work.

UNIVERSITY AND EDUCATIONAL NEWS.

IN his last report President Eliot recommends the collection of \$2,500,000 as an endowment for the college of Harvard University, and it is said that the alumni are making efforts to collect this sum before the next commencement day. The class of 1880 expects to contribute \$100,000 on the occasion of its twenty-fifth anniversary.

MR. ANDREW CARNEGIE has given to the Rensselaer Polytechnic Institute at Troy \$125,000 toward rebuilding the main building which was burned last June. He has also given \$100,000 to Tufts College for the erection of a library building.

THE trustees of Stevens Institute of Technology in Hoboken have decided to proceed with the construction of the proposed Morton Memorial Chemical Laboratory as soon as possible. The sum of \$91,000 has been raised

and \$4,000 is available in unpaid subscriptions. It had been planned to spend \$100,000 for the building and site. The proposed building will contain a memorial room in which will be placed souvenirs of the late president and other members of the faculty who have died.

COLUMBIA UNIVERSITY has established a course in chemical engineering leading to the degree of chemical engineer. The university has received a gift of \$10,000 to equip a laboratory of electro-chemistry.

MR. EDWARD WHITLEY, of Trinity College, Oxford, has given £1,000 to the university towards the endowment of a chair of pathology.

THE Johnston Scholarships, founded at the Johns Hopkins University by the late Mrs. Harriet Lane Johnston, in memory of her husband and two sons, have been awarded for the current academic year as follows: The Henry E. Johnston scholarship to Solomon Farley Acree, B.S. (Texas), Ph.D. (Chicago), in chemistry; the James Buchanan Johnston scholarship to Henry S. Conard, A.M. (Haverford), Ph.D., in botany; the Henry E. Johnston, Jr., scholarship to Isaac Woodbridge Riley, A.B., Ph.D. (Yale), in philosophy. The stipend of each of these scholarships is the income of \$30,000. They are offered primarily to young men who have given evidence of the power of independent research, and the holders are expected to devote themselves to advanced study and to research in the Johns Hopkins University.

MR. OMAR RAY GULLION has resigned his position as assistant in physiology at the University of Missouri to accept an instructorship in pharmacology at Cornell University.

THE University of Wisconsin will next year give instruction in meteorology under Mr. James L. Bartlett, observer at the University station of the U. S. Weather Bureau.

THE new chairs of helminthology and protozoology at the London School of Tropical Medicine have been filled by the appointment of Mr. Robert Thomson Leiper to the former and Mr. W. S. Perrin to the latter.